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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,868	08/06/2003	Toshimizu Tomitsuka	Q76270	7629
23373	7590	03/23/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			FRIEDHOFER, MICHAEL A	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/634,868	TOMITSUKA ET AL.	
	Examiner	Art Unit	
	Michael A. Friedhofer	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 7, 17, and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-6, 8-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al in view of Sadamori et al.

Tanabe et al discloses in figures 9-13 a switch sheet comprising a spring member 35, a resin sheet adhesively supported by an external surface of the spring member, and a substantially rigid member 38 positioned adjacent the resin sheet and comprising a protrusion part 39 protruding towards a center part of the spring member. The sheet 15 forms a circumferential part of the protrusion part and is adhered via spacer 37 and substrate 32 to the resin sheet. The switch sheet forms a plurality of spring members and rigid members opposite center parts thereof. The axis along a direction of extension of the protrusion part is aligned with the rotationally symmetrical axis of the spring member. The resin sheet substantially covers the spring member. The resin sheet extends outwardly beyond an external periphery of the spring member. The protrusion part is in contact with the resin sheet and may be made of sheet metal. The protrusion part is generally cylindrical with a cylindrical cross-section.

Tanabe et al does not disclose the substantially rigid member supported by a side of the resin sheet facing the protrusion part.

Sadamori et al teaches in figures 2-3 a switch sheet a spring member 1; a resin sheet 12 adhesively supported by an external surface of the spring member; and a protrusion part 7b protruding towards a center part of the spring member. The rigid member is supported by a side of the resin sheet facing the protrusion part.

It would have been obvious to one of ordinary skill in the art to apply the teachings of Sadamori et al to use a full resin sheet placed between the rigid member and the spring member rather than separate sheets for each spring member because this is for the purpose of reducing the number of parts and reducing the number of manufacturing steps while maintaining the proper operation of the switches.

3. Claims 19-21 and 23-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriyama in view of Tanabe et al.

Kuriyama discloses in figures 7-9 a sheet for a multi-directionally operable switch having an execution key and a directional key including a plurality of spring members 35,36 positioned to correspond to said execution key and the directional key; and a resin sheet 39 supported by external surfaces of the spring member. The spring members are generally arranged in a cross shape, wherein on the spring members is positioned at a center of the cross shape and others of

the spring members are positioned at prescribed locations in four directions from the center. Substrate 31 comprises fixed contacts 32,33 on which the spring members are positioned. And an actuator 40 positioned adjacent to the resin sheet.

Kuriyama does not disclose the plurality of protrusion parts opposite the center parts of the spring members and a circumferential part connected to the resin sheet.

Tanabe et al discloses in figures 9-13 a switch sheet comprising a spring member 35, a resin sheet adhesively supported by an external surface of the spring member, and a substantially rigid member 38 positioned adjacent the resin sheet and comprising a protrusion part 39 protruding towards a center part of the spring member. The sheet 15 forms a circumferential part of the protrusion part and is adhered via spacer 37 and substrate 32 to the resin sheet. The switch sheet forms a plurality of spring members and rigid members opposite center parts thereof. The axis along a direction of extension of the protrusion part is aligned with the rotationally symmetrical axis of the spring member. The resin sheet substantially covers the spring member. The resin sheet extends outwardly beyond an external periphery of the spring member. The protrusion part is in contact with the resin sheet and may be made of sheet metal. The protrusion part is generally cylindrical with a cylindrical cross-section.

Boulanger teaches keyswitches in which substantially rigid members such as protrusions 42 extend toward spring discs 20 for the purpose of focusing the force of the operation to the center of the spring discs for enhanced switching.

It would have been obvious to one of ordinary skill in the art to apply the teachings of Tanabe et al and Boulanger to Kuriyama to include a substantially rigid member including protrusion parts and a circumferential part between the actuator and the resin sheet because this is for the purpose of focusing the force applied on the center of the spring member ensuring proper operation and feel of the switches.

Allowable Subject Matter

4. Claims 7, 17, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Friedhofer whose telephone number is 571-272-1992. The examiner can normally be reached on Mon-Fri 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2832

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michael A. Friedhofer
Primary Examiner
Art Unit 2832

maf